



COST ACTION TU0904 – IFER
Integrated Fire Engineering and Response

Malta, April 2012

Collaboration with the Fire Brigades of Catalonia to define new protocols for collecting data from a fire

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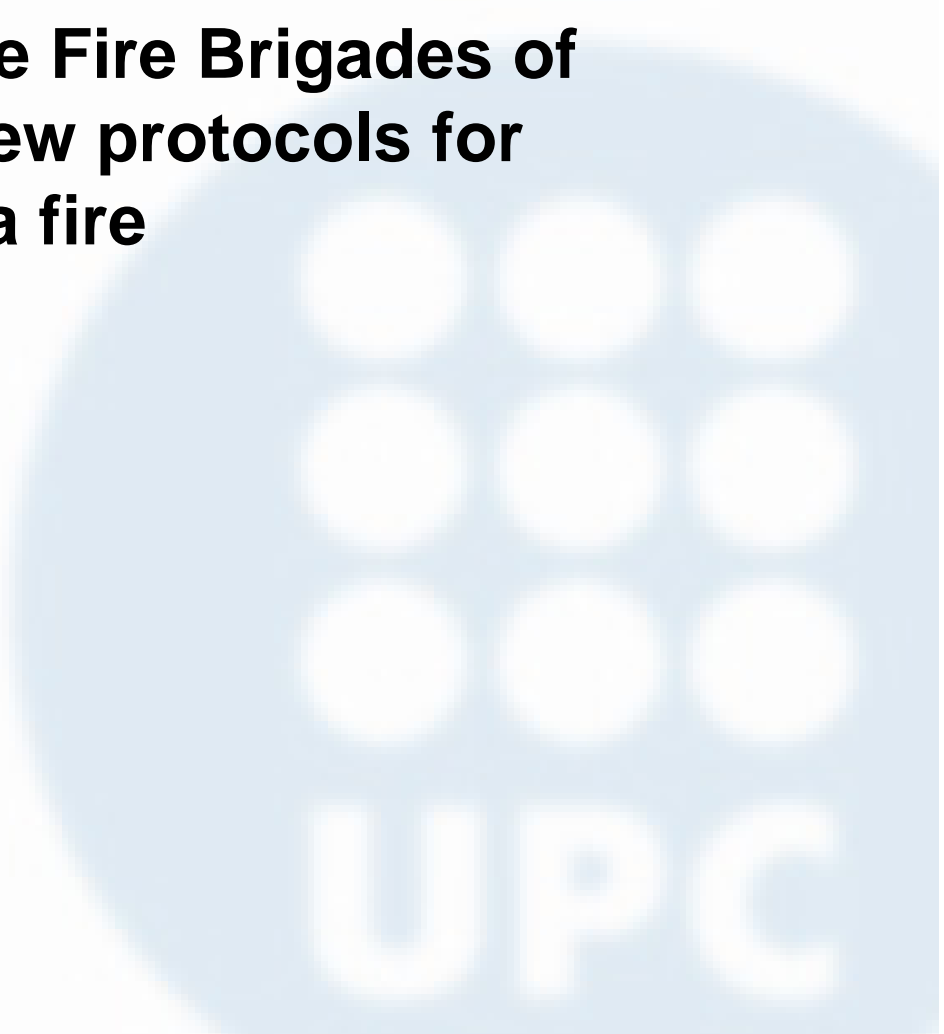
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Fire Brigade of Catalonia



Surface: 32,000 km²
Population: 6,000,000



Fire Brigade of Barcelona



Surface: 100 km²
Population: 1,600,000
Buildings: 85,000
Housing units: 760,000

Fire Brigade of Barcelona

➤ Technical reports.

They contains:

- Data of the service: type (fire, rescue,...), call-out time and arrival time, human and material resources...
- Characteristics of the service when firefighters arrive and evolution
- Development of the service
- Causes
- Damages and affected persons

➤ Monthly and annual Statistics. Examples:

INTERVENTION SERVICES TYPE 2010

Tipo	Services
Fire and explosions	3,564
Rescue (1,849 sanitary assistances included)	4,065
Technical assistances	3,947
Operational prevention*	1,063
False alarms	2,776
Total	15,415

*Patrolling, practical training, etc.

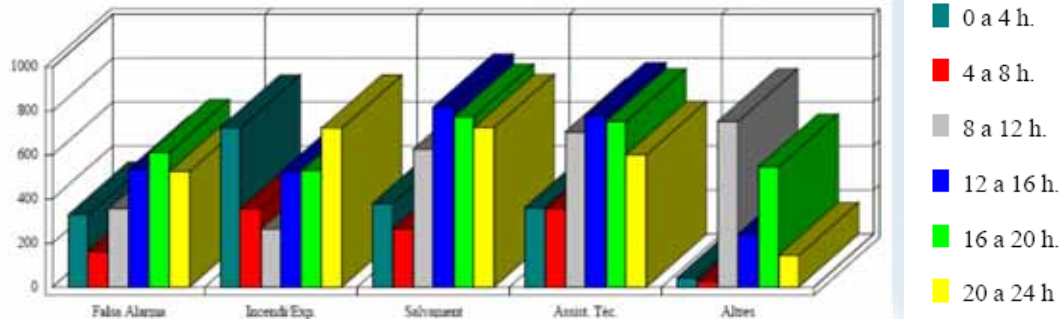
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FIRE NUMBER ACCORDING TO THE DAYTIME 2010

Time zone	Services
from 0 to 4	821
from 4 to 8	393
from 8 to 12	313
from 12 to 16	598
from 16 to 20	639
from 20 to 24	800
Total	3,564

NIGHT (20:00-8:00): 56.51 % of fires

DAY (8:00-20:00): 43.49 % of fires



NUMBER OF FIRE AND EXPLOSION DISTRIBUTED BY DISTRICT 2010

District	Inabitants	km ²	Inabitants/ km ²	Services
Ciutat Vella	107,426	4.4	24,591	326
Eixample	266,874	7.5	35,696	618
Sants-Montjuïc	182,395	22.9	7,951	462
Les Corts	82,952	6.0	13,785	138
Sarrià-Sant Gervasi	143,911	20.1	7,162	275
Gràcia	123,383	4.2	29,479	242
Horta-Guinardó	171,186	11.9	14,329	237
Nou Barris	168,181	8.0	20,914	319
Sant Andreu	146,528	6.6	22,318	298
Sant Martí	228,701	10.5	21,732	643
Totals	1,621,537	102.2	15,872	3,558

Fire Brigade of Barcelona

PLACES WHERE THE FIRES WERE PRODUCED 2010

Place	Subtotal		Total	
	Services	%	Services	%
BUILDINGS			1,517	42.57%
dwellings	1,151	32.30%		
public residences	24	0.67%		
administrative	51	1.43%		
sanitary	8	0.22%		
bars, restaurants and meeting points	95	2.67%		
educational buildings	22	0.62%		
commercial buildings	118	3.31%		
garages and parking lots	48	1.35%		
ROADS			1,807	50.70%
vehicles	157	4.41%		
rubbish containers	921	25.84%		
others	729	20.45%		
DIVERSE			240	6.73%
building works	30	0.84%		
Industrial and warehouses	45	1.26%		
railway premises	13	0.36%		
plots	93	2.61%		
forest areas	58	1.63%		
beaches, breakwaters, sea, river	1	0.03%		
Total			3,564	100%

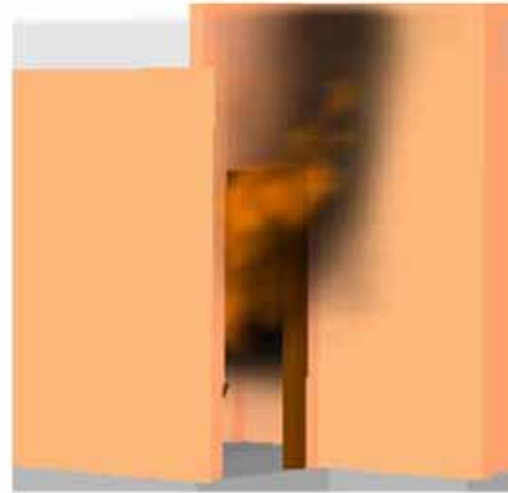
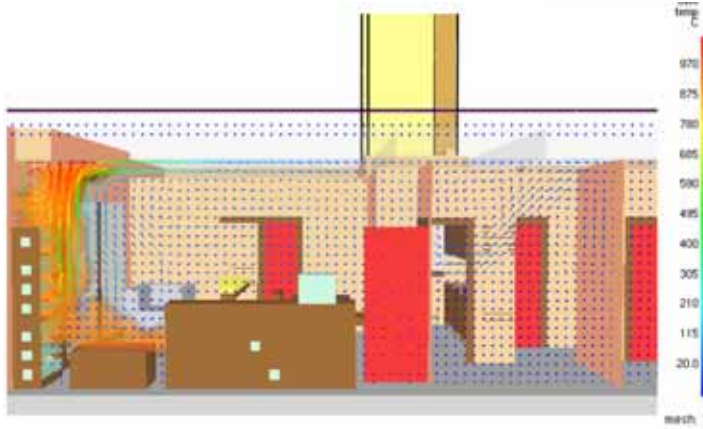
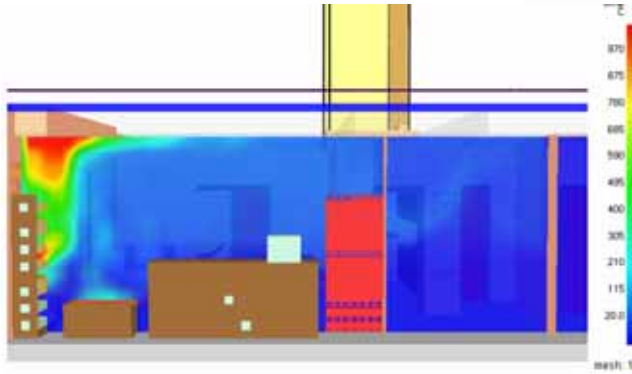
CAUSES

Fires and explosions 2011	number	%
Undetermined	1121	35.9
Natural causes	4	0.13
Heating devices	126	4.0
Mechanical energy	75	2.4
Electrical energy	438	14.0
Naked fire	928	29.8
Chemical reactions	6	0.2
Other causes	421	13.5
TOTAL	3119	100

Fire Brigade of Catalonia

Some experiences of collaboration:

- Studies of fire evolution with CFD models
- Comparison with real scenarios



Fire Brigade of Catalonia

➤ Incident Research System SIS (Sistema d'Investigació de Sinistres) Research Group

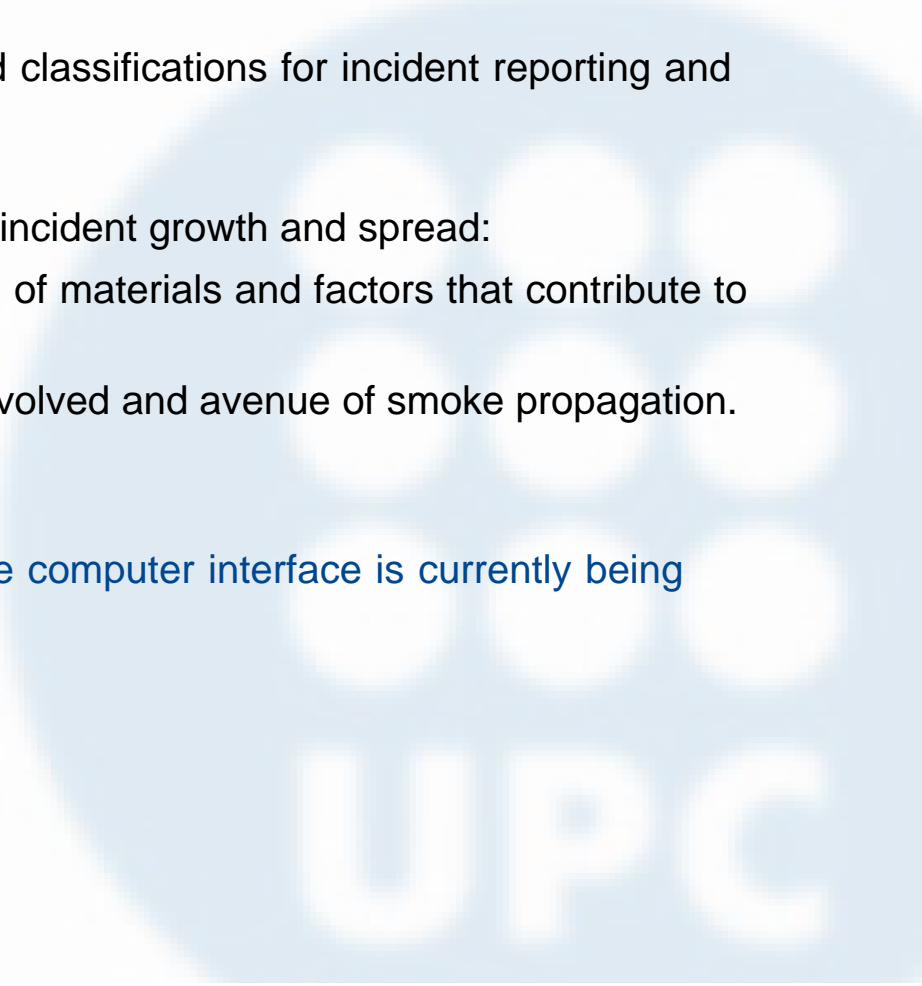
Objective: To create a database containing information about real fires

Based on NFPA-901:2006 Standard classifications for incident reporting and fire protection data.

The reports will include data about incident growth and spread:

- Flame development: identification of materials and factors that contribute to flame propagation
- Smoke development: materials involved and avenue of smoke propagation.
- weather information

The protocol is nearly finished. The computer interface is currently being developed.





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11-12 April 2012

Thanks for your attention



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BASIC FIGURES

- 6 fire stations and seasonal equipment located in Vallvidrera.
- 15,415 intervention services.
- 722 staff members of the fire brigade.
- 4.45 fire men per every 10,000 inhabitants.
- 7.06 firemen per km².

CITY DATA

Beach linear metres	4,580 m
Port perimeter	31,900 m
Forest surface	1,795 ha
Dwelling buildings	75,932
Other buildings	10,812
Total buildings	86,744
Dwellings	757,928

(Source: Yearbook of Statistics of the City of Barcelona 2010)

DISTRIBUTION OF THE STAFF RENDERING SERVICES FOR THE SPEIS ACCORDING TO THEIR SEX

	Men	%	Women	%
Operational staff	694	98.16	13	1.84
Non-operational staff	9	60	6	40
Total (722)	703	97.37	19	2.63

